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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,193	01/30/2004	Masaru Oda	392.1865	5035
21171 7590 08/08/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER LOUIE, WAE LENNY	
			ART UNIT 3661	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/767,193	Applicant(s) ODA ET AL.	
	Examiner Wae Lenny Louie	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/30/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-12, 14-17, 19-20 are pending and under consideration. Claims 13 and 18 have been cancelled.

Claim Objections

Claims 16 and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The above claims are dependent on canceled claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelley (4,402,053).

As per claims 1 and 10, Kelley discloses an object taking-out apparatus for taking out an object comprising a robot (20) having a robot arm (22); a hand attached to a distal end of the robot arm and having holding means for holding an object (col. 4, lines 66-68 and col.5, lines 1-4); a detecting means for detecting an object to be taken out; and a controller for issuing commands to said hand (col. 4, lines 19-22), wherein said hand has orientation changing means (col. 4, lines 10-13) provided at said hand (col.

14, lines 25-27), for changing orientation of said holding means to selectively take one of a plurality of orientations including a first orientation (col.14, lines 27-29) and a second orientation (col. 14, lines 31-32) different from each other in accordance with a command from the robot controller (col.4, lines 30-31). Kelley also discloses a center of holding by said holding means that is offset from an axis of a proximal portion thereon (col.5, lines 36-38). Kelley also discloses a visual sensor (42) for detecting a condition of placement of an object wherein said orientation changing means changes the orientation of said holding means according to the detected condition before holding the object (col. 14, lines 25-40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 3, 4, 5, 10, 11, 12, 17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al (4,402,053).

As per claims 2, 3, 4, 5, 11, 12, 17, Kelley discloses all the claimed elements as mentioned in claims 1 and 10, and further discloses a center of holding offset from an axis of a proximal portion (col. 4, lines 36-38), Kelley fails to disclose specific ranges, for example, an angle equal to or less than 45 degrees or an angle substantially equal to 90 degrees.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an object taking-out apparatus for taking out an object of Kelley to include a plurality of orientations at a plurality of angles, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As per claim 20, Kelley further discloses a visual sensor attached to the distal end of end of a robot arm (42), but Kelley fails to disclose a slider mechanism for the visual sensor to move on.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an object taking-out apparatus for taking out an object of Kelley to include a slider mechanism for the visual sensor to move on, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Claims 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al. (4,402,053), in view of Kanno (US 6,597,971 B2). Kelley discloses all the claimed elements as mentioned in claims 1 and 10, and further discloses a visual sensor (44) for detecting a condition of placement of an object (col. 7, lines 18-19), an orientation changing means (col. 4, lines 66-68), a visual sensor having means for storing taught image models of an object as seen from different directions (col. 10, lines 46-52), a means for comparing a captured image of the object with the taught image models (col. 8, lines 36-38), and for selecting one of the taught image models according

to a degree of conformity (col. 8, lines 38-39), Kelley fails to disclose that said orientation changing means changes the orientation of a holding means according to a detected condition or taught image model before holding the object.

Kanno in the same field of invention discloses an object taking out apparatus with an orientation changing means that changes the orientation of said holding means according to detected conditions (col. 4, lines 8-11) and taught image models (col. 7, lines 59-62) before holding the object.

From this teaching of Kanno, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the object taking-out apparatus of Kelly to include an orientation changing means that changes the orientation of a holding means according to detected conditions and taught image models as taught by Kanno in order for a robot to pick up randomly stored work pieces to reduce a burden on an operator (col.1, lines 50-53).

Claims 8, 9, 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al. (4,402,053), in view of Wilder et al. (4,613,269).

As per claims 8, 15, and 18, although Kelley discloses all the claimed elements as mentioned in claims 1 and 10, Kelley fails to disclose a visual sensor for detecting condition of overlapping of objects, wherein a holding position of the object by said holding means is changed according to the detected condition.

Wilder in the same field of invention discloses an object taking out apparatus with a visual sensor (1) for detecting condition of overlapping of objects (via 105; Fig. 6),

wherein a holding position of the object by said holding means is changed according to the detected condition (via 125; col. 9, lines 26-28).

From this teaching of Wilder, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the object taking-out apparatus of Kelly to include a visual sensor for detecting condition of overlapping of objects, wherein a holding position of the object by said holding means is changed according to the detected condition as taught by Wilder in order to acquire jumbled objects or work pieces from a bin and transferring them to an intermediate or final site (Wilder, col. 1, lines 37-39).

As per claims 9, 16, and 19, the combination of Kelley and Wilder fails to disclose the use of a slider mechanism for the visual sensor to move on. It also would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an object taking-out apparatus for taking out an object of Kelley to include a slider mechanism for the visual sensor to move on, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Response to Arguments

Applicant's arguments filed 5/21/2007 have been fully considered but they are not persuasive. With regards to claim 1 and 10, applicant claims that Kelley does not discuss or suggest orientation changing means provided at the hand; robot assembly includes a controller which issues a command to the hand prior to holding an object in accordance with a status of the object to be taken out. Examiner disagrees.

Kelley discloses the use of a vacuum cup 28 that is attached to an end of the arm 24 of the robot assembly to hold an object. Kelley also suggests that although vacuum suction be preferred, other types of grasping mechanisms could be used, such as jaws, fingers, electromagnets (col. 5, lines 1-28). The applicant's orientation changing means would have fit the scope of Kelley's invention.

Kelley further discloses "to acquire a workpiece from the bin, the imaging system views the bin and candidate holdsites are established. These holdsites are potential surfaces on the workpiece which the hand can engage. The hand moves into contacting engagement with a holdsite on a piece and engages the workpiece" (col. 1, line 67- col.2, line 5). The **detecting means** corresponds with the imaging system, the **status of the object to be taken out** corresponds with the potential surfaces on the workpiece, and when the **controller issues a command to the hand prior to holding an object** corresponds to when the hand moves into contacting engagement with a holdsite.

With regards to claims 2-9 and 11-20, the rejections under 35 U.S.C. 103(a) stands as stated in the claims rejection above.

Examiner withdraws the requirement to invoke 35 U.S.C., 6th paragraph or 37 C.F.R. Chapter I.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wae Lenny Louie whose telephone number is 571-272-5195. The examiner can normally be reached on M-F 0700-1530.

Art Unit: 3661

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WLL



THOMAS BLACK
SUPERVISORY PATENT EXAMINER